UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/521,483	07/20/2005	Edward Morton	P2416US	2088

8968 7590 09/28/2007

DRINKER BIDDLE & REATH LLP
ATTN: PATENT DOCKET DEPT.
191 N. WACKER DRIVE, SUITE 3700
CHICAGO, IL 60606

EXAMINER	
KAO, CHIH CHENG G	

ART UNIT	PAPER NUMBER
2882	

MAIL DATE	DELIVERY MODE
09/28/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/521,483	MORTON, EDWARD	
	Examiner	Art Unit	
	Chih-Cheng Glen Kao	2882	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 23-44* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 23-44* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *20 January 2005* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *11/14/05*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the field shape of a parallelepiped as recited in claim 42 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

2. The following guidelines illustrate the preferred layout for the specification of a utility application. These guidelines are suggested for the applicant's use.

Arrangement of the Specification

As provided in 37 CFR 1.77(b), the specification of a utility application should include the following sections in order. Each of the lettered items should appear in upper case, without underlining or bold type, as a section heading. If no text follows the section heading, the phrase "Not Applicable" should follow the section heading:

(a) TITLE OF THE INVENTION.
(b) CROSS-REFERENCE TO RELATED APPLICATIONS.
(c) STATEMENT REGARDING FEDERALLY SPONSORED RESEARCH OR DEVELOPMENT.
(d) THE NAMES OF THE PARTIES TO A JOINT RESEARCH AGREEMENT.
(e) INCORPORATION-BY-REFERENCE OF MATERIAL SUBMITTED ON A COMPACT DISC.
(f) BACKGROUND OF THE INVENTION.
    (1) Field of the Invention.
    (2) Description of Related Art including information disclosed under 37 CFR 1.97 and 1.98.
(g) BRIEF SUMMARY OF THE INVENTION.
(h) BRIEF DESCRIPTION OF THE SEVERAL VIEWS OF THE DRAWING(S).
(i) DETAILED DESCRIPTION OF THE INVENTION.
(j) CLAIM OR CLAIMS (commencing on a separate sheet).
(k) ABSTRACT OF THE DISCLOSURE (commencing on a separate sheet).
(l) SEQUENCE LISTING (See MPEP § 2424 and 37 CFR 1.821-1.825. A "Sequence Listing" is required on paper if the application discloses a nucleotide or amino acid sequence as defined in 37 CFR 1.821(a) and if the required "Sequence Listing" is not submitted as an electronic document on compact disc).

Claim Objections

3. Claims 1 and 23-44 are objected to because of the following informalities, which appear to be minor draft errors including grammatical and/or lack of antecedent basis problems.

In the following format (location of objection; suggestion for correction), the following correction(s) may obviate the objection(s): (claim 1, line 5; inserting --of-- after "automatically

control driving"), (claim 24, line 3; changing "width" to --with--), (claim 27, line 2; inserting a comma before "wherein the X-ray"), (claim 30, line 1; deleting the comma after "wherein"), (claim 30, line 2, "the others"; replacing "others" with --other vanes--), (claim 33, line 1; inserting a comma before "further comprising"), (claim 33, line 1; deleting the comma after "comprising"), (claim 34, line 1; replacing "d.c." with --D.C.--), and (claim 41, line 2; inserting a comma after "a circular gear").

Claims 23-44 are objected to by virtue of their dependency. For purposes of examination, the claims have been treated as such. Appropriate correction is required.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 42 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

The claim calls for allowing field shapes selected from parallelepipeds. Although, the specification as originally filed describes field shapes of squares and diamonds (fig. 6), there is

no description of how to make a parallelepiped. Therefore, the claim is rejected for enablement issues.

5. Claims 26-28 and 43 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

6. Regarding claim 26, the term "normally" in lines 2 and 3 is a relative term which renders the claim indefinite. The term "normally" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

7. Regarding claim 27, the term "normal" in line 3 is a relative term which renders the claim indefinite. The term "normal" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

8. Regarding claim 28, the phrase "such as" in line 3 renders the claim indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

9. Regarding claim 43, the term "normally" in line 3 is a relative term which renders the claim indefinite. The term "normally" is not defined by the claim, the specification does not provide a standard for ascertaining the requisite degree, and one of ordinary skill in the art would not be reasonably apprised of the scope of the invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1, 24, 25, and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Chiu et al. (US 5278887).

11. Regarding claim 1, Chiu et al. discloses a collimator assembly for an X-ray imaging system (title) comprising adjustable X-ray attenuating collimator vanes (fig. 8, #22) arranged to define an area of a patient (fig. 1, #10) to be exposed to an X-ray beam (fig. 1, #16), and an image processing apparatus (fig. 8, #12) arranged to automatically control driving (col. 15, lines 59-66; and col. 17, lines 32-45) of the collimator vanes to attenuate the X-ray beam to form exposure fields of chosen shape.

12. Regarding claim 24 Chiu et al. further discloses the assembly in which the collimator vanes have an X-ray transmission profile selected from: uniform and opaque; partially

transparent with uniform transmission; partially transparent with a linear wedge shaped transmission profile; partially transparent with an exponential transmission profile (col. 8, line 66, through col. 9, line 8); partially transparent with a parabolic transmission profile; and partially transparent with an arbitrary transmission profile.

13. Regarding claim 25, Chiu et al. further discloses the assembly in which the X-ray exposure field has a centre and an edge (col. 17, lines 30-32), wherein the vanes comprise partially transparent collimator vanes which are most transparent towards the centre of the X-ray field and least transparent at the edge of the X-ray field (col. 8, line 66, through col. 9, line 8).

14. Regarding claim 32, Chiu et al. further discloses the assembly in which the vanes of the automatically driven collimator have a transmission profile, wherein the profile is a varying transmission profile (col. 8, line 66, through col. 9, line 8).

15. Claims 1, 28, 30, 31, 33, 36-38, 40 are rejected under 35 U.S.C. 102(b) as being anticipated by Sklebitz (US 4817125).

16. Regarding claim 1, Sklebitz discloses a collimator assembly for an X-ray imaging system (abstract) comprising adjustable X-ray attenuating collimator vanes (fig. 2, #13) arranged to define an area of a patient (fig. 2, #25) to be exposed to an X-ray beam (fig. 1, from #9), and an image processing apparatus arranged to automatically control driving of the collimator vanes to

attenuate the X-ray beam to form exposure fields of chosen shape (col. 3, line 51, through col. 4, line 6).

17. Regarding claim 28, Sklebitz further discloses wherein the vanes are arranged in collimator vane configurations selected from: two sets of opposing pairs of flat opaque material; flexible attenuating material; slats of attenuating material arranged to draw over each other; and multiple opposing collimator vanes (fig. 2, #13).

18. Regarding claim 30, Sklebitz further discloses wherein each vane is extendable into the radiation field independently of all the other vanes (col. 7, lines 25-31).

19. Regarding claim 31, Sklebitz further discloses the assembly in which the radiation field has sides, wherein the vanes comprise two sets (fig. 2, #12) of parallel vanes and each set comprises 8 to 20 vanes (fig. 2, #13), the sets being in opposed positions (fig. 2, at #12) on each side of the radiation field.

20. Regarding claim 33, Sklebitz further discloses an individual drive means (fig. 2, #15 and 16) associated with each of the vanes of the automatically driven collimator arranged to move the vane independently of other vanes (col. 7, lines 25-31).

21. Regarding claim 36 Sklebitz further discloses the assembly in which the drive means comprises one of a linear actuator (fig. 2, #15) and a solenoid.

22. Regarding claims 37 and 38, Sklebitz further discloses the assembly in which each of the vanes (fig. 2, #13) of the automatically driven collimator is under mechanical tension (fig. 2, via #15) so that it must be actively driven to move across the radiation field (col. 3, line 61, through col. 4, line 6), and in which the mechanical tension is provided by spring-loading (col. 3, lines 29-40).

23. Regarding claim 40, Sklebitz further discloses wherein the radiation field has a centre and the automatically driven collimator (fig. 1, #12) forms part of an assembly which is rotatable (fig. 1, via #17-20) about the centre of the radiation field.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

24. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu et al. as applied to claim 1 above, and further in view of Tretiakov et al. (WO 01/00092).

Chiu et al. discloses an assembly as recited above.

However, Chiu et al. fails to disclose a first manually driven collimator, which employs opaque collimator vanes arranged to provide rectangular exposure fields.

Tretiakov et al. teaches a first manually (page 12, lines 13-23) driven collimator (fig. 1, #3), which employs opaque collimator vanes (fig. 1, #3a) arranged to provide rectangular exposure fields (page 12, lines 31-33).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the assembly of Chiu et al. with the first collimator of Tretiakov et al., since one would have been motivated to make such a modification for improving image quality (abstract) as implied from Tretiakov et al.

Furthermore, since the Examiner finds that the prior art included each element claimed, although not necessarily in a single prior art reference, with the only difference between the claimed invention and the prior art being the lack of actual combination of the elements in a single prior art reference, and since the Examiner finds that one of ordinary skill in the art could have combined the elements as claimed by known methods, and that in combination, each element merely would have performed the same function as it did separately, the Examiner finds that one of ordinary skill in the art would have recognized that the results of the combination were predictable. Therefore, such a claimed combination is obvious.

25. Claims 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiu et al. as applied to claim 1 above.

Chiu et al. discloses an assembly as recited above. Chiu et al. further discloses the assembly in which the radiation field has a periphery and a normally exposed region (col. 17, lines 30-32), wherein the vanes are partially transparent collimator vanes having an X-ray transmission, which has a minimum value at the periphery, or within the normally exposed

region, of the radiation field, wherein the X-ray transmission is a percentage of the normal intensity (col. 8, line 66, through col. 9, line 11).

However, Chiu et al. fails to disclose opaqueness or 2 to 10% of the normal intensity.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the assembly of Chiu et al. with the above percentages, since where the general conditions of a claim are disclosed in the prior art, discovering the optimum or working ranges involves only routine skill in the art (col. 8, line 66, through col. 9, line 11), with results that would have been predictable to one having ordinary skill in the art. One would have been motivated to make such a modification for better obtaining the desired transparency profile (col. 9, lines 1-11) as implied from Chiu et al.

26. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sklebitz as applied to claim 1 above, and further in view of Vlasbloem et al. (US 4715056).

Sklebitz discloses an assembly as recited above.

However, Sklebitz fails to disclose wherein the vanes have an edge profile arranged such that no gaps of high X-ray transmission appear between the vanes as they are moved.

Vlasbloem et al. teaches wherein vanes have an edge profile arranged such that no gaps of high X-ray transmission appear between the vanes as they are moved (fig. 4c).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the assembly of Sklebitz with the edge profiles of Vlasbloem et al., since one would have been motivated to make such a modification for reducing line effects in images (col. 4, line 63, through col. 5, line 7) as shown by Vlasbloem et al.

27. Claim 34 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saladin et al. (US 6788764) in view of Sklebitz and Stewart et al. (US 3502878).

Saladin et al. discloses a collimator assembly for an X-ray imaging system (abstract) comprising adjustable X-ray attenuating collimator vanes (fig. 4, #6) arranged to define an area of a patient (fig. 2, under #38) to be exposed to an X-ray beam (fig. 2, #40), an individual drive means (fig. 4, via #52) associated with each of the vanes (fig. 4, #6) of the driven collimator arranged to move the vane independently of other vanes (abstract), and one of a D.C. motor and a stepping (abstract) motor (fig. 4, #52) in which drive means comprises a wire drive (fig. 4, #54) under the control of the motor (fig. 4, #52).

However, Saladin et al. fails to disclose an image processing apparatus arranged to automatically control driving of the collimator vanes to attenuate the X-ray beam to form exposure fields of chosen shape and pulleys.

Sklebitz teaches an image processing apparatus arranged to automatically control driving of collimator vanes to attenuate an-ray beam to form exposure fields of chosen shape (col. 3, line 51, through col. 4, line 6). Stewart et al. teaches using pulleys (col. 6, lines 70-71).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the assembly of Saladin et al. with the image processing apparatus of Sklebitz, since one would have been motivated to make such a modification for avoiding great loss of image quality and reducing disturbances for the operator (col. 4, lines 21-26) as shown by Sklebitz.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the assembly of Saladin et al. with the teaching of using pulleys of Stewart et al., since one would have been motivated to make such a modification for reducing the workload on motors.

Furthermore, since the prior art (i.e., Saladin et al.) contained a base "device" upon which the claimed invention can be seen as an "improvement", and since the Examiner finds that the prior art (i.e., Stewart et al.) contained a comparable device that was improved (with a pulley) in the same way as the claimed invention, the Examiner finds that one of ordinary skill in the art could have applied the known "improvement' technique in the same way to the "base" device and the results would have been predictable to one of ordinary skill in the art. Therefore, such a claimed combination is obvious.

In addition, it would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the assembly of Saladin et al. as modified above with multiple pulleys, since it is well known in the art to use multiple pulleys, which one would have been motivated to incorporate for reducing the amount of energy needed for work.

28. Claim 35 is rejected under 35 U.S.C. 103(a) as being unpatentable over Saladin et al., Sklebitz, and Stewart et al. as applied to claim 34 above, and further in view of Burchell (US 3206604).

Saladin et al. as modified above suggests an assembly as recited above.

However, Saladin et al. fails to disclose the assembly in which the drive means includes a mechanical clutch arranged to couple mechanical power from the motor to the pulleys.

Burchell teaches an assembly in which drive means includes a mechanical clutch arranged to couple mechanical power from a motor to a pulley (col. 7, lines 64-70).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further modify the assembly of Saladin et al. as modified above with the teachings of clutches of Burchell, since one would have been motivated to make such a modification for reducing damage when torque is too great.

Furthermore, since the Examiner finds that the prior art contained a "base" device upon which the claimed invention can be seen as an "improvement", and since the Examiner finds that the prior art (i.e., Burchell) contained a known technique that is applicable to the base device, the Examiner finds that one of ordinary skill in the art would have recognized that applying the known technique would have yielded predictable results and resulted in the improved system. Therefore, such a claimed combination is obvious.

29. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sklebitz as applied to claim 1 above, and further in view of Cosman (US 6459769).

Sklebitz discloses an assembly as recited above.

However, Sklebitz fails to disclose an encoder arranged to ensure accurate positioning of the vanes relative to the radiation field.

Cosman teaches an encoder arranged to ensure accurate positioning of vanes relative to a radiation field (col. 6, lines 19-27).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the assembly of Sklebitz with the encoder of Cosman, since one

would have been motivated to make such a modification for more accurately determining movement (col. 6, lines 19-27) as implied from Cosman.

30. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sklebitz as applied to claim 40 above.

Sklebitz discloses an assembly as recited above. Sklebitz further discloses the assembly in which the radiation field has a periphery (fig. 2, inside #24) and the assembly further comprises a motor-driven (fig. 2, via #19) endless screw (fig. 2, #20) and a circular gear (fig. 2, #17 and 18), wherein the screw (fig. 2, #20) and gear (fig. 2, #17 and 18) are arranged to surround the periphery of the radiation field (fig. 2, inside #24) and to rotate the assembly.

However, Sklebitz fails to disclose a cog.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the assembly of Sklebitz with a cog, since endless screws and cogs were well known art-recognized equivalents for their use in turning another mechanical component such as a gear, and the selection of any of these known equivalents would have been within the level of ordinary skill in the art.

Furthermore, since the Examiner finds that the prior art (i.e., Sklebitz) contained a device which differed from the claimed device by the substitution of the motor-driven endless screw assembly with a motor-driven cog assembly, and since the Examiner finds that the substituted assemblies and their functions were well known in the art, the Examiner thus finds that one of ordinary skill in the art could have substituted one known assembly for another, and the results

of the substitution would have been predictable. Therefore, such a claimed combination is obvious.

31. Claims 42 and 43 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sklebitz as applied to claim 1 above, and further in view of Cosman (US 5748703).

Sklebitz discloses an assembly as recited above.

However, Sklebitz fails to disclose the assembly in which each vane is arranged to be driven to an arbitrary angle to allow field shapes, and an iris assembly created from the X-ray attenuating vanes which are each rotatable about points located outside of the normally exposed radiation field.

Cosman teaches an assembly in which each vane is arranged to be driven to an arbitrary angle (fig. 7, via #714a-716b) to allow field shapes, and an iris assembly created from the X-ray attenuating vanes (fig. 7, #704a-706b) which are each rotatable about points (fig. 7, via #714a-716b) located outside of the normally exposed radiation field.

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to modify the assembly of Sklebitz with the vanes of Cosman, since these different types of vanes were well known art-recognized equivalents as shown by Cosman (fig. 2a-2d), and the selection of any of these known equivalents would have been within the level of ordinary skill in the art.

Furthermore, since the Examiner finds that the prior art (i.e., Sklebitz) contained a device which differed from the claimed device by the substitution of one type of vane assembly for another, and since the Examiner finds that the substituted vane assemblies and their functions

were known in the art (figs. 2a-2d of Cosman), the Examiner thus finds that one of ordinary skill in the art could have substituted one known assembly for another, and the results of the substitution would have been predictable. Therefore, such a claimed combination is obvious.

Also note that recitations (i.e., driving to allow field shapes selected from parallelepipeds, squares, and diamonds) with respect to the manner in which a claimed apparatus is intended to be employed do not differentiate the claimed apparatus from prior art if the prior art teaches all the structural limitations of the claim. See MPEP 2114.

32. Claim 44 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sklebitz as applied to claim 1 above, and further in view of Stewart et al.

Sklebitz discloses an assembly as recited above. Sklebitz further discloses individual mechanical components (fig. 2, #13 and 15) and an electronic circuit (fig. 2, #21 and 16) arranged to control and power the individual mechanical components (fig. 2, #13 and 15) within the collimator.

However, Sklebitz fails to disclose monitoring the position of the individual mechanical components.

Stewart et al. teaches monitoring the position of individual mechanical components (fig. 4, via #18 and 26).

It would have been obvious, to one having ordinary skill in the art at the time the invention was made, to further modify the assembly of Sklebitz as modified above with the monitoring of Stewart et al., since one would have been motivated to make such a modification

for providing feedback to ensure that vanes are in the right position to eliminate unnecessary radiation exposure (col. 1, lines 61-66) as implied from Stewart et al.

Furthermore, since the Examiner finds that the prior art contained a "base" device upon which the claimed invention can be seen as an "improvement", and since the Examiner finds that the prior art contained a known technique (from the teachings of Stewart et al.) that is applicable to the base device, the Examiner thus finds that one of ordinary skill in the art would have recognized that applying the known technique would have yielded predictable results and resulted in the improved system. Therefore, such a claim combination is obvious.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chih-Cheng Glen Kao whose telephone number is (571) 272-2492. The examiner can normally be reached on M - F (9 am to 5 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272-2490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Chih-Cheng Glen Kao
Primary Examiner
Art Unit 2882